INTERMATIONAL SEARCH REPORT

Internation plication No PCT/JP 02/13351

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A63B41/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

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Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 752 890 A (IKEMOTO HISASHI ET AL) 19 May 1998 (1998-05-19) column 2, line 43 - line 67 column 3, line 65 -column 4, line 21; figure 2	15
х	US 4 856 781 A (SUMIDA HIDEKI ET AL) 15 August 1989 (1989-08-15) cited in the application column 4, line 50 -column 6, line 5 column 8, line 53 -column 9, line 13; claim 1; figures 5,15-20	15
x	US 4 239 568 A (TAKAZAWA KAZUYASU) 16 December 1980 (1980-12-16) cited in the application column 1, line 67 -column 2, line 51; figures 3-10 -/	15

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X Further documents are listed in the continuation of box C.	X Patent family members are listed in annex.					
Special categories of cited documents:						
A document defining the general state of the art which is not considered to be of particular relevance E earlier document but published on or after the International filing date L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O document referring to an oral disclosure, use, exhibition or other means P document published prior to the international filing date but later than the priority date claimed	 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family 					
Date of the actual completion of the international search	Date of mailing of the international search report					
20 August 2003	28/08/2003					
Name and mailing address of the ISA	Authorized officer					
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